

TRAFFIC CONTROL SYSTEM UTILIZING ON-BOARD VEHICLE INFORMATION MEASUREMENT APPARATUS

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Abstract of CA2112302

OF THE DISCLOSURE A railway traffic control system is disclosed in which accurate vehicle information is effectively available in real-time to facilitate control of traffic flow. Unlike prior art methods of precisely monitoring train location, the current invention is dependant only on equipment on-board the vehicle and position updates provided by external benchmarks located along the track route. The system's dynamic motion capabilities can also be used to sense and store track rail signatures, as a function of rail distance, which can be routinely analyzed to assist in determining rail and road-bed conditions for preventative maintenance purposes. In presently preferred embodiments, the on-board vehicle information detection equipment comprises an inertial measurement unit providing dynamic vehicle motion information to a position processor. Depending on the amount and quality of apriori knowledge of the vehicle route, the inertial measurement unit may have as many as three gyroscopes and three accelerometers or as little as a single accelerometer. To minimize error between benchmarks, the processor preferably includes a recursive estimation filter to combine the apriori route information with movement attributes derived from the inertial measurement unit.

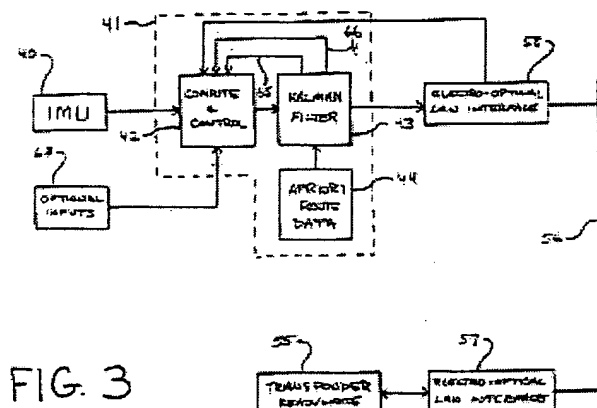


FIG. 3

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